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ABSTRACT

Most research on Acquired Immune Deficiency Syndrome (AIDS) has been medical and most social science research on AIDS has been concerned with social factors in its spread and with social-psychological effects of contracting AIDS. This study was conducted to examine public attitudes toward, and public knowledge about AIDS. Knowledge about AIDS was measured by an index summing correct answers to 15 true-false items based on information readily available to subjects. Attitudes toward AIDS were measured by a set of 18 belief statements concerning persons with AIDS to which subjects agreed or disagreed on a 5-point Likert-type scale. Both instruments were completed by 117 college students. The results suggest that a large majority of college students have basic knowledge of the mechanisms of AIDS contagion and have little misinformation, yet are limited in their knowledge about its history, progress, and diagnosis. The data also suggest that college students share neither fear of casual contact with, nor moral condemnation of, persons with AIDS. Respondents did show inconsistency between their knowledge and their attitudes. While a majority recognized that AIDS is not spread through casual contact, a majority also expressed aversion toward food preparation and handling by persons with AIDS or by persons living with a person with AIDS. Although a majority of subjects were noncondemning and nonfearful of being in close proximity to persons with AIDS, a minority expressed negative attitudes toward persons with AIDS. (NB)

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ATTITUDES TOWARDS AND KNOWLEDGE OF AIDS

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The Acquired Immune Deficiency Syndrome (AIDS) was discovered only 7 years ago, and popular knowledge of the syndrome is even more recent. Due to its epidemic spread and potential catastrophic implications for society, most research on the Syndrome has been medical. Social science research on AIDS has been primarily concerned with social factors in its spread and with social-psychological effects of contracting AIDS and ARC (Curran et. al., 1985; Emmons et. al., 1986; Feldman and Johnson, 1986; Klovdahl, 1985; Polk, 1985; Price-Greathouse, 1986). At the inception of our study (Fall, 1985), there had been no reported attempt to measure systematically public attitudes towards and knowledge about AIDS.[1] This paper presents two instruments for examining such attitudes and knowledge; it describes their development, reliability and validity. It also reports the results of a survey of AIDS attitudes and knowledge with these instruments.

We expected that there would be negative attitudes towards AIDS. Like any illness, especially one involving pain and debilitation, one would reasonably predict AIDS to be evaluated as undesirable; but we expected strong negative attitudes towards AIDS and persons with AIDS (PWA) because of fear of its contagion and deadly consequences, and because of its prevalence among deviant groups held in reprobation: intravenous drug users and male homosexuals (Larsen et al., 1980; Larsen et al., 1983; Schneider and Lewis, 1984).

The mass media have reported extremely negative attitudes towards persons with AIDS. Most of these attitudes, manifest in both behavior and explicit statements, indicate fear of the disease, that is fear of its infectious qualities as in cases of parents fighting school attendance by children with AIDS (Conrad, 1986). Often these attitudes also indicate moral repugnance towards persons with AIDS as in statements that AIDS is a punishment for the

sins of its victims. But how extensive is this fear and moral repugnance? Are attitudes reported by the press merely newsworthy stories of a few extreme reactions or are these attitudes shared by the public? Given its rapid spread and debilitating consequences leading ultimately to death, a knowledgeable person would be concerned and take precautions; but such a person would not necessarily harbor fear and condemnation of those who acquire the disease.

We expected to find limited knowledge about AIDS for two contradictory reasons. First, reports of the excessive fear it has generated suggest many have not attended to dissemination of scientific findings of AIDS transmissibility only by exchange of blood or body fluids. Were this known, there would not be the reported avoidance of casual contact with persons with AIDS. Second, AIDS prevalence among relatively small subgroups: male homosexuals, intravenous drug users and hemophiliacs, means that the majority of people do not see themselves at risk and, therefore, do not perceive a need to be informed about the details of the disease. Because personal relevance affects selective attention to and retention of information (Jemmatt et. al., 1986), we predicted knowledge of AIDS to be relatively low in the general population.

We expected attitudes towards AIDS to be positively associated with knowledge of AIDS for three reasons: 1) knowledgeable persons would be aware that AIDS cannot be spread by casual contact, and thus, would not be afraid of persons with AIDS; 2) AIDS' connection with stigmatized groups, its sexual transmission and its terminal, wasting course can stimatize persons with AIDS and create barriers to absorbing accurate information about AIDS (Conrad, 1986); and 3) members of risk groups along with their family and friends should have greater knowledge of AIDS and greater sympathy towards persons with AIDS.[2] This paper attempts to test these predictions concerning public attitudes towards and knowledge about AIDS with a sample of college students.

METHODS

Subjects were 117 university students who were enrolled Spring Semester 1986, in introductory or lower level psychology and sociology courses with no prerequisites. Subjects were thus neither familiar with nor sophisticated about survey research methods. Most of the subjects were freshmen and sophomores (50.4%), between the ages of 18 and 24 (82.1%), and white (84.6%). Females comprised 54.7 percent of the subjects; males 41.9 percent; and 3.4 percent were unspecified.

Knowledge of AIDS is measured by an index summing correct answers to 15 true-false items based on information readily available to subjects in the sample. Since the subjects were college students, available information was drawn from pamphlets on AIDS distributed by campus organizations and from publications likely to be read by students such as campus and local newspapers. Although all students do not read these sources, most newspapers and TV news have reported the same information. Items were selected to vary in level of specificity and area of knowledge: agent of infection, mode of transmission, preventive measures, progress, diagnosis, and treatment. Approval of the physician on the university AIDS task force insured accuracy of each item.

Attitudes towards AIDS is measured by a set of belief statements concerning persons with AIDS to which subjects are to indicate agreement or disagreement on a 5 point Likert-type scale (1=SD, 5=SA). We derived items from statements of attitudes towards persons with AIDS contained in press releases and from modified items on mental health attitude inventories (Hiday, 1983). From an initial pool of thirty statements, we chose 18 as representative test items. We edited each of them for clarity, singularity of

meaning, redundancy, and directionality (Edwards, 1957). Validity is achieved by the plan and procedures of item/scale construction (content validity, Nunnally, 1967), and the instrument's face validity. Additionally, we sought construct validity from a judging panel and criterion validity from the instrument's ability to discriminate between the student sample and a known group.

The judging panel consisted of an existing group with some expertise in problems associasted with AIDS, a university wide task force formed for the purpose of recommending "policies and procedures to be used in appropriate responses...to the AIDS epidemic." We asked members of the panel by mail to rate each test item according to the direction of the expressed attitude: negative, neutral, or nonnegative.[3] Because of the small size of its membership (N=19) and the resulting possibility of identification, we requested no demographic data from them. Thirteen members of the task force responded.

The relative frequencies of judges' responses on each attitude item appear in Table 1. On all but one item, #4, at least 60 percent of the judges (8 of 13) agreed in their rating with the intended direction of the test item. For Item #4, 7 of 13 judges rated the item neither clearly negative nor nonnegative, while 5 agreed with the intended nonnegative direction. Since the task force was intended to be objective about persons with AIDS and to concern itself with public health and civil liberty issues surrounding AIDS, it is not surprising that a majority viewed Item #4 as neutral. We, nonetheless, retained the item because we hypothesized that someone who judged AIDS victims as immoral would think money should not be spent to save their lives.

The last validation was discrimination between the sample and a criterion or known group. Subjects' mean score on the scale was compared with the mean

score of a sample of volunteers (N=37) from a local gay-oriented health project. These volunteers work on a telephone information service which provides callers with information on AIDS and on AIDS support services provided by the organization. The sample of volunteers consists of all who attended their regular meeting at which we requested their participation. Most were male (83.8%), white (89.2%), between the ages of 24 and 34 (67.6%), and had completed four or more years of college (83.8%). We predicted the volunteer group would be significantly more positive or nonnegative towards AIDS and persons with AIDS; and that is what we found. The criterion group had a mean score of 85.95 (sd=4.28) compared to the student group's mean score of 62.15 (sd=12.43) ($p < .0001$, t test).

RESULTS

Table 2 presents the mean ratings for each attitude item and for the scale. The attitudes are generally "positive" or nonnegative towards AIDS and persons with AIDS, that is subjects tend to disagree with negative statements and agree with sympathetic ones. The overall mean rating for the scale is above the midpoint and the range is skewed toward the high end. Scores range up to 90, the maximum possible, but no scores are less than 30, 12 points above the possible minimum. The scale has high reliability (Cronbach's alpha = .9303).

The mean ratings for all but three individual items are greater than their midpoints. Only three items (#3, #5, and #8) receive strong reaction, with means greater than 4 or less than 2. Responses to these items show clear rejection of negative moral evaluations of persons with AIDS. The three items which are less than the midpoint (#6, #9, and #16), indicating negative attitudes, involve the closest physical contact to persons with AIDS. These

responses suggest fear of contagion from ingestion--eating food a person with AIDS has prepared or sharing living space (including food utensils), with a person with AIDS.

Table 3 presents subject responses to items measuring knowledge of AIDS. Knowledge of the Acquired Immune Deficiency Syndrome is not high. Mean number of correct answers is only 7.9 (sd=2.74) out of a possible 15. Knowledge ranges from no correct answers to 15. For only 7 items do a majority know the correct answers (the first five items plus #14 and #15). These items contain more general, rather than specific, information about the mechanisms of AIDS contagion. As one would expect, the most basic information item (#5, "There is no cure for AIDS") receives the largest number of correct responses; however, surprisingly it is not known by everyone. Items dealing with more specific information on the progress and diagnosis of the disease (#6, #9, #12, #13, #17) are not well known. Such items receive a majority of "Don't Know" responses. In no case does a majority answer an item incorrectly. Rather than being misinformed, the sample is largely uninformed and recognizes it. They respond "Don't Know" rather than incorrectly when they do not have the correct information. In two cases, however, there are large proportions with incorrect answers: 43.1% think AIDS can be contacted through giving blood (#7); and 45.2% do not think the Red Cross takes the precaution of refraining from collecting blood in cities with the highest incidence of AIDS (#11).

Because of the expected association between AIDS knowledge on the one hand and fear of and sympathy for persons with AIDS on the other, we predicted a positive association between our two instruments; and that is what we found. Persons more knowledgeable about AIDS are more positive towards persons with AIDS. Attitudes towards and knowledge of AIDS have a zero order correlation of .212 ($p < .05$). While this correlation is in the predicted direction, it is

not high. A sample more hetereogeneous than our college students probably would have greater variation in knowledge and in attitudes with larger proportions scoring both high and low on the indices; and thus, would have a larger correlation between knowledge and attitudes.

SUMMARY AND CONCLUSIONS

Our data suggest that a large majority of college students have basic knowledge of the mechanisms of AIDS contagion, have little misinformation, yet are limited in their knowledge about its history, progress and diagnosis. Our data also suggest that college students share neither fear of casual contact with nor the moral condemnation of persons with AIDS, graphic incidents of which have been reported in the news. On the other hand, our sample showed inconsistency between their knowledge and attitudes. Where a majority recognized that AIDS is not spread through casual contact such as sharing a drinking glass, a majority also expressed aversion towards food preparation and handling by persons with AIDS or living with a person with AIDS. Given media reports of AIDS virus found in tears and saliva, the fact that these are body fluids, and the relatively limited understanding that science yet has about the disease, it is not surprising that they respond correctly to an objective question; yet are unwilling to risk exposure to body fluids not known to be agents of infection.

Although a majority of our sample were noncondemning and nonfearful of being in close proximity to persons with AIDS, a minority expressed negative attitudes towards persons with AIDS. This minority varied on each item, ranging from a low of 0.9 percent who believed that good people don't get AIDS to a high of 27.3 percent who would not shake hands with a person who has AIDS. The three items expressing moral condemnation were the ones with the

smallest minority (0.9% to 6.0%); the items expressing fear of casual contact (touching, shaking hands, working in same office) were the ones with the largest minority (25.6% to 27.3%).

Ours is a study of AIDS attitudes and knowledge among a select population at one point in time. While our sample may be representative of college students, college students are not representative of the general population. They are less restricted by institutional constraints and are closer to intellectual trends than the general population (Hastings and Hoge, 1986). On the other hand, their views tend to be a precursor of cultural change in the larger society (Yankelovich, 1981). Thus, one would expect that a survey of the general population taken at the same time as ours would have found less knowledge about AIDS and more negative attitudes towards persons with AIDS.

Given the increase of media coverage and education programs on AIDS since the time of our survey, we would expect college students to have more knowledge about the disease today and even more at a later time. If AIDS spreads more widely through the heterosexual, nondrug community as is predicted, personal relevance should increase. Accordingly, attention to and retention of information about AIDS should follow. Furthermore, if AIDS spreads more widely, the moral condemnation of persons with AIDS because of their likelihood of being gay or intraveneous drug users should be reduced. On the other hand, as long as AIDS remains a dread disease, that is, incurable, untreatable, terminal and wasting, it will probably continue to generate a certain amount of fear and inconsistent responses among the population.

FOOTNOTES

[1]We recognize that polling organizations, major newspapers and newsmagazines, and television networks have surveyed the public at large about their perceptions of AIDS. While these surveys included questions about the number of AIDS cases, the contagiousness of the disease, the threat to respondents and the general public, they did not attempt to survey a range of specific attitudes or knowledge on which to build indices.

[2]Gay organizations, especially the gay press, have been active disseminating AIDS information (McLeod and Miller, 1985). Additionally, risk group members and their family and friends have established support groups for persons with AIDS and ARC.

[3]We use the term nonnegative instead of positive because one would not reasonably expect positive attitudes towards AIDS or towards persons with AIDS given the debilitating, incurable, and terminal qualities of the disease.

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TABLE 1. Judge's Ratings of Directionality of Items

		Negative	Neutral	Non-negative
1.	I would allow my child to attend school where I knew that there was a child with AIDS.	.08	.15	.77
2.	I would attend a concert which was intended to raise money for persons with AIDS.	.00	.00	1.00
3.	Persons with AIDS deserve to die.	1.00	.00	.00
4.	Research on AIDS should be funded by the federal government.	.08	.53	.39
5.	Good people don't get AIDS.	1.00	.00	.00
6.	Persons with AIDS should not be allowed to work in restaurants.	.62	.15	.23
7.	I would shake hands with a person who has AIDS.	.15	.16	.69
8.	People get AIDS because they are immoral.	.92	.00	.08
9.	I would not eat in a restaurant where I suspected that someone with AIDS worked.	.69	.23	.08
10.	I would not object to working in an office where someone with AIDS worked.	.16	.23	.62
11.	I would not touch a person with AIDS.	.92	.08	.00
12.	I would continue to visit a friend who got AIDS.	.00	.08	.92
13.	I would fire an employee who got AIDS.	.92	.08	.00
14.	Persons with AIDS should be quarantined.	.85	.00	.15
15.	I would eat in a restaurant where someone with AIDS is eating.	.69	.08	.23
16.	I would not continue to live with a roommate who got AIDS.	.69	.08	.08
17.	Persons with AIDS should not be allowed to teach school.	.85	.08	.08
18.	Having AIDS should not be something to be ashamed of.	.08	.30	.62

TABLE 2. Students' Attitudes Towards AIDS[a]

Item[b]	$\bar{X}$	sd	Correlation
1. I would allow my child to attend school where I knew that there was a child with AIDS.	3.24	1.03	.5654
2. I would attend a concert which was intended to raise money for persons with AIDS.	3.56	1.17	.5172
3. Persons with AIDS deserve to die.[c]	4.31	.86	.5877
4. Research on AIDS should be funded by the federal government.	3.70	1.01	.4250
5. Good people don't get AIDS.[c]	4.38	.67	.4428
6. Persons with AIDS should not be allowed to work in restaurants.[c]	2.41	1.01	.4999
7. I would shake hands with a person who has AIDS.	3.19	1.13	.7602
8. People get AIDS because they are immoral.[c]	4.04	.96	.4383
9. I would not eat in a restaurant where I suspected that someone with AIDS worked.[c]	2.64	.99	.6495
10. I would not object to working in an office where someone with AIDS worked.	3.23	1.10	.7753
11. I would not touch a person with AIDS.[c]	3.31	1.12	.7098
12. I would continue to visit a friend who got AIDS.	3.75	1.07	.7369
13. I would fire an employee who got AIDS.[c]	3.86	.95	.7131
14. Persons with AIDS should be quarantined.[c]	3.81	.92	.6787
15. I would eat in a restaurant where someone with AIDS is eating.	3.69	.99	.7547
16. I would not continue to live with a roommate who got AIDS.[c]	2.51	1.17	.6216
17. Persons with AIDS should not be allowed to teach school.[c]	3.28	1.01	.7854
18. Having AIDS should not be something to be ashamed of.	3.27	1.24	.6538

[a]N=117, range = 18-90, midpoint = 58, Cronbach's Alpha = .9303. Mean of Index = 62.6.
[b]Items use a 5 point agree/disagree scale. (1=SD, 5=SA).
[c]Item reversed for scoring.

TABLE 3. Knowledge of AIDS[a]

Item[b]	Distribution of Responses: True N	True %	False N	False %	DK N	DK %
1. Today, blood donations are no longer screened for evidence of AIDS infection.	3	2.6	<u>94</u>	81.0	19	16.4
2. AIDS is caused by a virus.	<u>76</u>	65.5	13	11.2	27	23.3
3. Research indicates that AIDS is not spread through casual contact, such as the sharing of a drinking glass.	<u>70</u>	60.4	18	15.5	28	24.1
4. The use of condoms during sex greatly increases the risk of transmitting AIDS, though at present it is not known why this is so.	2	1.7	<u>88</u>	75.9	26	22.4
5. There is no cure for AIDS.	<u>100</u>	86.2	3	2.6	13	11.2
6. Kaposi's sarcoma is rarely seen in persons with AIDS.	3	2.6	<u>12</u>	10.3	101	87.1
7. AIDS is contacted through giving blood.	50	43.1	<u>53</u>	45.7	13	11.2
8. AIDS is the abbreviation for Auto-Immune Deficiency Syndrome.	48	41.4	<u>45</u>	38.8	23	19.8
9. A diagnosis of AIDS, as defined by the CDC, requires the presence of an opportunistic infection or Kaposi's sarcoma.	<u>8</u>	6.9	5	4.3	103	88.8
10. In Eastern Africa, AIDS has struct primarily homosexuals.	20	17.2	<u>21</u>	18.1	75	64.7
11. The Red Cross does not collect blood donations in the cities with the highest incidence of AIDS.	<u>9</u>	7.8	52	45.2	54	47.0
12. The test for evidence of AIDS infection which has been used to protect the nation's blood supply is mainly a diagnostic tool, useful in diagnosing individual cases of AIDS.	30	26.1	<u>16</u>	13.9	69	60.0
13. Regular use of the inhalant drug amyl nitrate has been shown to reduce the risk of getting AIDS.	2	1.7	<u>26</u>	22.6	87	75.7
14. AIDS can be spread from a mother to her unborn child.	<u>77</u>	67.0	4	3.5	34	29.6
15. AIDS is more common among female homosexuals than among male homosexuals.	1	.9	<u>85</u>	73.3	30	25.9

[a]Mean number of correct answers is 7.9, sd = 2.74.
[b]Correct answers underlined.